ENVIRONMENTAL PROTECTION AGENCY
REGION 8

LIBBY ASBESTOS PROJECT

FINAL DISPOSAL OPERATIONS PLAN FOR THE FORMER W.R. GRACE MINE

June 2005
New A&E Contract Version

Prepared by:
U.S. Department of Transportation
Research and Special Programs Administration

John A. Volpe National Transportation Systems Center
Environmental Engineering Division
55 Broadway, Kendall Square
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Addendum to the June 2005 New A&E Contract Version

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for
Libby Asbestos Project
Libby, Montana

This document reflects Libby Asbestos Project roles, responsibilities, and relationships involving the previous A&E contract awarded to a single contractor. Under the new A&E contracts, Libby Asbestos Project roles, responsibilities, and relationships are not assigned to a single contractor, but are competed as separate task orders (TOs) (e.g., Design, Oversight, Community Relations, etc.) and may be performed by different contractors. Accordingly, offerors should refer to the TO to clarify issues in the GFI regarding roles, responsibilities, and relationships.

This document refers to Standard Operating Procedures (SOPs) from the previous A-E contract. These SOPs are confidential business information (CBI) of the previous A-E contractor; accordingly, the SOPs have been withdrawn from all GFI that contained them. The contractor shall utilize its own replacement SOPs having the same titles and numbers.

Where the GFI refers to the past contractor's quality assurance program, the contractor shall utilize its own quality assurance program.

Contents

Appendices

Section 1
Introduction

The John A. Volpe National Transportation Systems Center (Volpe Center) is providing environmental engineering and remediation support to Region 8 of the Environmental Protection Agency (EPA). Volpe Center support includes the preparation of technical documents, development of environmental plans (e.g., sampling and analysis, removal action, etc.), environmental assessments and investigations, and removal and remediation projects. Currently the Volpe Center is supporting the EPA's Libby Asbestos Project. Investigative and cleanup actions are taking place under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund. The Volpe Center is providing support for the identification, removal and disposal of asbestos contaminated soil, vermiculite-containing insulation (VCI), and dust at numerous operable units and residential properties located in and around Libby, Montana. The insulation, dust and soil at these properties are contaminated with tremolite asbestos as a result of historic vermiculite mining in Libby, Montana by W.R. Grace.

Libby is the site of the former largest vermiculite mine in the world, which had been operational for 70 years. In the 1920s, the Zonolite Company formed and began mining vermiculite. In 1963, W.R. Grace bought the Zonolite mining operations. The mine closed in 1990. While in operation, the vermiculite mine in Libby may have produced 80 percent of the world's supply of vermiculite. Vermiculite has been used in building materials, as a soil conditioner, and as backfill material. It has been determined that the vermiculite from the Libby mine was contaminated with an exceedingly toxic form of naturally occurring asbestos called tremolite-actinolite asbestiform mineral fibers, herein referred to as Libby Amphibole (LA) asbestos.

Since late 1999, EPA, with assistance from the Volpe Center, has conducted comprehensive cleanup of properties throughout Libby, Montana. The purpose of this document is to outline operations at the former W.R. Grace mine (mine), which will serve as a disposal location for asbestos contaminated soil and material from numerous operable units and residences in Lincoln County, Montana as required by the EPA. Currently, asbestos contaminated soil is disposed at the mine, and VCI (along with asbestos contaminated material – ACM) is disposed of at the asbestos cell at the Lincoln County Class IV Asbestos Landfill (Asbestos Cell). This Former W.R. Grace Mine Disposal Operations Plan serves as a guidance document for current and future project mine operations, but may be amended at any time to reflect changes in operations and/or protocol.

Section 2
Former W.R. Grace Mine Disposal Operations Plan

2.1 Mine Site Description

The mine site is located approximately 6.6 miles up Rainy Creek Road (Mine Road) from Highway 37 in Libby, Montana. Historically, this site was the origin of raw vermiculite materials. All asbestos contaminated soils and some commingled contaminated materials that are associated with the EPA's response action in Libby, will be disposed of at the mine.

Contaminated soils will be hauled to the Mine Road and disposed of two miles along the paved road from Highway 37 at the former amphitheater area (amphitheater). A waste transfer station was constructed at the amphitheater previous to the 2003 construction season for overall project use. The mine road is paved from Highway 37 to the waste transfer station in order to allow trucks outfitted with positive pressure units to unload their waste and return to work sites in the Libby area while staying on an asphalt surface. The asphalt road serves as a "clean" surface for trucks to travel on and remain clean throughout the truck-hauling trip. A water truck will be utilized to maintain a clean asphalt surface during mine operations. The truck driver will dump the contents of the truck's bed and then proceed to clean the truck bed and rinse the truck tires before allowing the truck to leave the exclusion zone. The exclusion zone begins approximately 100 yards from the green gate, which is located at the beginning of the mine road, and continues the distance to the mine. The waste will then be transferred to trucks dedicated to the exclusion zone from the amphitheater staging area. These trucks will then haul the contaminated waste to the dumpsite (Area 19) at the mine where the placed soil and debris will then be spread. At the end of the work season, any equipment dedicated to the exclusion zone will require a complete decontamination.

The gravel roadway will be maintained from the amphitheater to Area 19 to allow access to the mine for disposal of soil and debris. Water trucks will be operated to provide proper dust control, and regular treatment of the roadway will be implemented to minimize the generation of dust from the road. Proper upkeep and maintenance of the road will occur periodically to prevent washouts and potholes from forming. Water will also be applied to minimize dust generation around the disposal operations.

A separate operable decon pad has been installed within the waste transfer station for vehicles previously authorized by the EPA, traveling between the exclusion zone and areas outside of the exclusion zone on a daily basis.

Figures 1 through 5 (Appendix A) are photographs with additional details imported onto them to further illustrate amphitheater and mine operations.

2.2 Disposal Objectives

The disposal of materials from various removal actions is planned for a one shift per day basis. Each shift will last ten hours, five days a week, Monday through Friday. The Mine Road will be in operation as long as weather permits safe operation. Amphitheater operations may be able to continue longer than actual mine dumping operations. If this is the case, contaminated soils and material will be stored at the amphitheater until operations to Area 19 of the mine start up the following spring.

This Mine Operations Plan describes the minimum activities necessary to transport asbestos-contaminated soil to designated disposal locations at the mine site. All transport and disposal work will be carried out in accordance with this Mine Operations Plan, the approved Project Comprehensive Health and Safety Plan (HASP), the approved operations HASP developed by the contractor responsible for mine operations, and all other government requirements. See Appendix C for the Comprehensive Site Health and Safety Program Plan, Initial Emergency Response Action, Libby Asbestos Project, Revision 3, May 2003.

Section 3
Decontamination

3.1 Equipment Decontamination

Thorough decontamination of the trucks will be required of any truck leaving the exclusion zone. The process will be to unlock tailgate locks, spray the truck box and rinse the truck tires with a pressure washer before allowing the truck to leave the exclusion zone. All means and methods will be used to insure all soil is removed from the truck box. The truck will then be visually inspected for remaining debris and tailgates re-locked upon satisfaction of the inspector, before the truck is allowed back in rotation to the removal sites. In addition to the daily decontaminations of the trucks at the amphitheater, at the end of the work season, any equipment dedicated to the exclusion zone will require complete decontamination.

During the summer of 2003, a second decontamination pad was installed adjacent to the amphitheater waste transfer station for use by W.R. Grace during the KDC Flyway Property clean-up operations. This second decontamination pad was installed as to not interfere with daily decontamination procedures being conducted. It is expected that W.R. Grace trucks will be hauling contaminated soil all the way to the mine and not using the waste transfer station at the amphitheater. After dumping the waste at the mine, the W.R. Grace trucks will return to the amphitheater area, decontaminate at the second decontamination pad, and then return to the Flyway property.

3.2 Personnel Decontamination

Proper decontamination facilities and rest room facilities on the border of the exclusion and clean zones will be established. Each decontamination facility will meet or exceed applicable Occupational Safety & Health Administration (OSHA) requirements, specifically those details pertaining to Safety and Health Regulations for Construction, Asbestos as outlined in 29 CFR Part 1926.1101. Each personnel decontamination facility will be provided with a first-aid station and full engineering controls including, but not limited to, employee personal protection equipment (PPE), fences, signs, traffic tape, etc. Sufficient water, heat, lighting, and electric power will be required at each personnel decontamination facility. All decontamination water will be collected and disposed of at the disposal location (Area 19) at the mine. All personnel that may come in contact with asbestos-containing material must use the decontamination facilities whenever leaving the exclusion zone and when their work shift is completed.

Section 4
Haul Routes

The Mine Road will be closed to all persons and vehicles not directly involved in the asbestos removal project. No public access will be permitted. Two-way radios will be used for communication. Beginning in the fall of 2003, Citizens Band (CB) radios will also be installed in each truck so that every driver has a reliable communication source during hauling operations. Coordination, loading, hauling, dumping, decontamination, and all related activities will be done in an efficient manner with a minimum of down time. Traffic control and speed limits must be established and adhered to in order to accommodate the truck volume, and to continue operating in a safe manner.

A second haul route has been established near the amphitheater so that W.R. Grace's Flyway Property clean-up operations will not interfere with current hauling conditions. The trucks will go around the waste transfer station on their way back from hauling to the mine disposal area and will be staged on the road until their designated decontamination pad is available for required decontamination processes.

Section 5
Health and Safety

All work during the operation of the mine will be conducted in Level C PPE. However, truck drivers fitted with positive pressure units in their cabs will not be required to wear Level C PPE. Only OSHA trained employees will be permitted past the green gate on the Mine Road. All work during mine operations will comply with the Comprehensive Site Health and Safety Plan (HASP). See Appendix C for the Comprehensive Site Health and Safety Program Plan, Initial Emergency Response Action, Libby Asbestos Project, Revision 3, May 2003. A site specific HASP for all work not included in the Comprehensive Site HASP will also be developed by any contractor involved with mine operations. Minimum required elements of the site specific HASP are as follows:

- Delineation of work zones including exclusion zone, contamination reduction zone, and support zone;
- Description of site hazards and contaminants (asbestos);
- Identification of Site Health and Safety Coordinator;
- Description of Level C PPE, to include the use of air purifying respirators with P100 cartridges in the exclusion zone, and powered air purifying respirators (PAPRs) for the dozer operator stationed at Area 19;
- Any site field monitoring to be performed;
- Personnel and equipment decontamination procedures;
- Emergency contact names and phone numbers; and
- Signature page signed by all site personnel indicating that the HASP is understood and will be complied with.

Personal air monitoring will be performed by the government's air monitoring subcontractor. Personal air monitoring will be conducted at a frequency based on the results of an assessment in accordance with OSHA regulations.

Section 6
Air Monitoring

The government will be responsible for planning, coordinating, and conducting air monitoring during all transport and disposal activities. The government's air monitoring subcontractor will provide all labor, equipment, materials, and incidentals required to perform all perimeter and personal air monitoring throughout the transport and disposal work at all locations identified in this operations plan. All air monitoring functions will meet the applicable OSHA regulations and all government requirements.

In addition to ambient air sampling, personal air sampling will be conducted on all workers and truck drivers to document compliance with 29 CFR Part 1926.1101. All personal air samples will be collected and analyzed in accordance with 29 CFR 1926.1101. Additional air sampling protocol is addressed in the Final Draft Response Action Work Plan (RAWP), Libby Asbestos Project, Libby, Montana, November 2003. The RAWP once finalized will serve as the final reference document.

Section 7
Transportation Activities

7.1 General

All truck drivers and personnel that may come in contact with asbestos-containing materials, must be 40-hour Hazardous Waste Operations (HAZWOPER) OSHA trained as described in the Comprehensive HASP. All personnel working on transport and disposal activities will be required to provide proper documentation confirming their 40-hour OSHA training certification is complete and refresher training is up to date. All trucks must be outfitted with positive pressure units in the cab area for truck driver safety.

Successful mine operation will include responsibility for planning, coordinating, controlling, and performing all transportation activities associated directly with mine operations. This includes, but is not limited to, determining and subcontracting the number of trucks and drivers needed for hauling materials from the amphitheater to Area 19, equipment and operators for loading trucks, covering all loads, equipment and personnel decontamination, dust suppression, disposal operations, Mine Road maintenance, traffic controls including signage, and all related work. Disposal activities are to be performed in a safe manner while adhering to the requirements of this mine operations plan and the Comprehensive HASP. Truck and driver numbers may be adjusted as necessary pertaining to the transport and disposal activities, as to minimize down time.

All transport operations will be conducted in compliance with all U.S. Department of Transportation (DOT) requirements, all Montana DOT requirements, applicable Montana Department of Environmental Quality (DEQ) Administrative Rules of Montana (ARM) requirements, including but not limited to load limits and necessary permits and registrations.

7.2 Recordkeeping

Trucks transporting materials to the amphitheater and to the mine will not be weighed for purposes of determining quantities of contaminated soil and other materials being disposed at the mine. However, trucks traveling to the mine (amphitheater and Area 19) will be counted and documented in a daily log of disposal activities. Bills of lading for the waste will be maintained and a copy furnished to the on-site government representative at the end of each season. Recordkeeping will follow the rules outlined in the Montana DEQ's ARM.

7.3 Loading

All trucks will be loaded in a manner that does not produce visible dust and that is in compliance with all air monitoring levels established by the government for this project. Truckloads will be limited to an amount that allows complete covering of the load and spillage on bumpy road does not occur. It is required that water misting be employed to control dust emissions during actual truck loading operations, along the paved portion of the road to the amphitheater, from the amphitheater to the disposal location at Area 19, and periodically by water truck during travel from loading areas to the amphitheater.

7.4 Covering Loads

All loaded trucks will be covered in a manner such that no visible or detectable dust emissions are generated during transport along Highway 37, the Mine Road or any other roadways traveled during the execution of the project. All loaded trucks traveling on public or private roads, will be tightly covered with a weather tight canvas roll roof or other durable and tear-proof material in a manner such that emissions are not visible or detectable from the trucks at any time during the trip to the disposal locations at the amphitheater dumping location. Truck covers will extend a minimum of one foot below the top of the truck body and be secured to the truck body with elastic tie down straps. Damaged or torn truck covers will immediately be replaced. Each truck cover will be checked for condition and fit on the truck prior to the truck leaving a removal site and the amphitheater. It will be recommended that trucks leaving the disposal site at Area 19 on their return haul to the amphitheater be covered as described above for the amphitheater to removal site trips, and will be required to do so if air monitoring activities determine this method ineffective.

7.5 Dumping

Coordination of the disposal activities will be implemented at the designated disposal areas at the amphitheater staging area and the actual mine dump site. Dumping contents of trucks will be performed in a manner such that there are no visible or detectable dust emissions. Areas where disposal takes place will be sprayed with water to prevent dust emissions. Areas with dust emissions will be sprayed with water until dust levels drop to acceptable levels as required by the government and do not endanger or impede the performance of personnel working in the area.

7.6 Dust Suppression on Rainy Creek Road (Mine Road)

Dust suppression is a primary concern with respect to transport and disposal activities on this project. The lower 2 miles of Rainy Creek Road is paved asphalt. Trucks and other equipment leaving the exclusion zone will be decontaminated at the amphitheater decontamination facility and proceed onto the paved portion of Rainy Creek Road to Highway 37. The primary method of dust control will be water utilization. There will be designated trucks moving contaminated soils and materials from the waste transfer

station at the amphitheater to the mine disposal site, thus these trucks never leave the exclusion zone. An adequate water supply and a sufficient number of water trucks and drivers to keep the Mine Road free from visible and detectable dust emissions will be required at all times when transport activities are underway. Water truck drivers will be required to meet the same OSHA health and safety requirements as drivers of trucks hauling asbestos contaminated soils and other materials. Dust suppression measures will be conducted in compliance with the requirements established by the Montana DOT, the government, and in the approved HASP.

Section 8
Disposal Site Management

8.1 Staffing

Coordination and planning of disposal activities at the mine site with respect to transport activities will be implemented. Staff will be equipped with two-way communication in the trucks so that traffic runs smoothly and efficiently throughout the entire operation. Representatives will be at the disposal locations to direct trucks to the appropriate disposal site. A sufficient number of workers will be employed to provide adequate water for dust suppression at the amphitheater and at Area 19, and for directing truck traffic and other subcontractors throughout the operation.

8.2 Water Supply

Adequate water supply will be essential at Area 19, along the Mine Road, at the amphitheater and at the personnel decontamination facility on Rainy Creek Road. There will be access to a settling pond located adjacent to the amphitheater in which the water is filtered for LA by 20 and 5 micron filters and then pumped for use in dust suppression and decontamination procedures.

8.3 Disposal Site Procedures

Traffic flow will be coordinated at the disposal locations. Traffic flow includes the loading, transport, disposal, and departure of empty trucks so that each category of material is disposed at the disposal location designated by EPA to receive that particular waste. Personnel will direct each truck to the proper disposal location, direct the physical dumping of each truck load, provide acceptable dust suppression, conduct decontamination procedures, and provide the front end loader, bulldozer and all other mechanical equipment necessary to effectively operate the complete mine operations.

Daily cover will not be placed at the disposal sites. A final design for mine stabilization once the project is complete, has not yet been finalized.

Section 9
Site Security

Security will be present at the entrance of the Mine Road before the green gate during normal remedial operations hours. Normal operations hours consist of a 50-hour workweek, Monday through Friday, 7:00 a.m. to 6:30 p.m. The mine operations schedule will be contingent on proper weather and road conditions.

Appendix A

Figure 1: Full Aerial View of Amphitheater

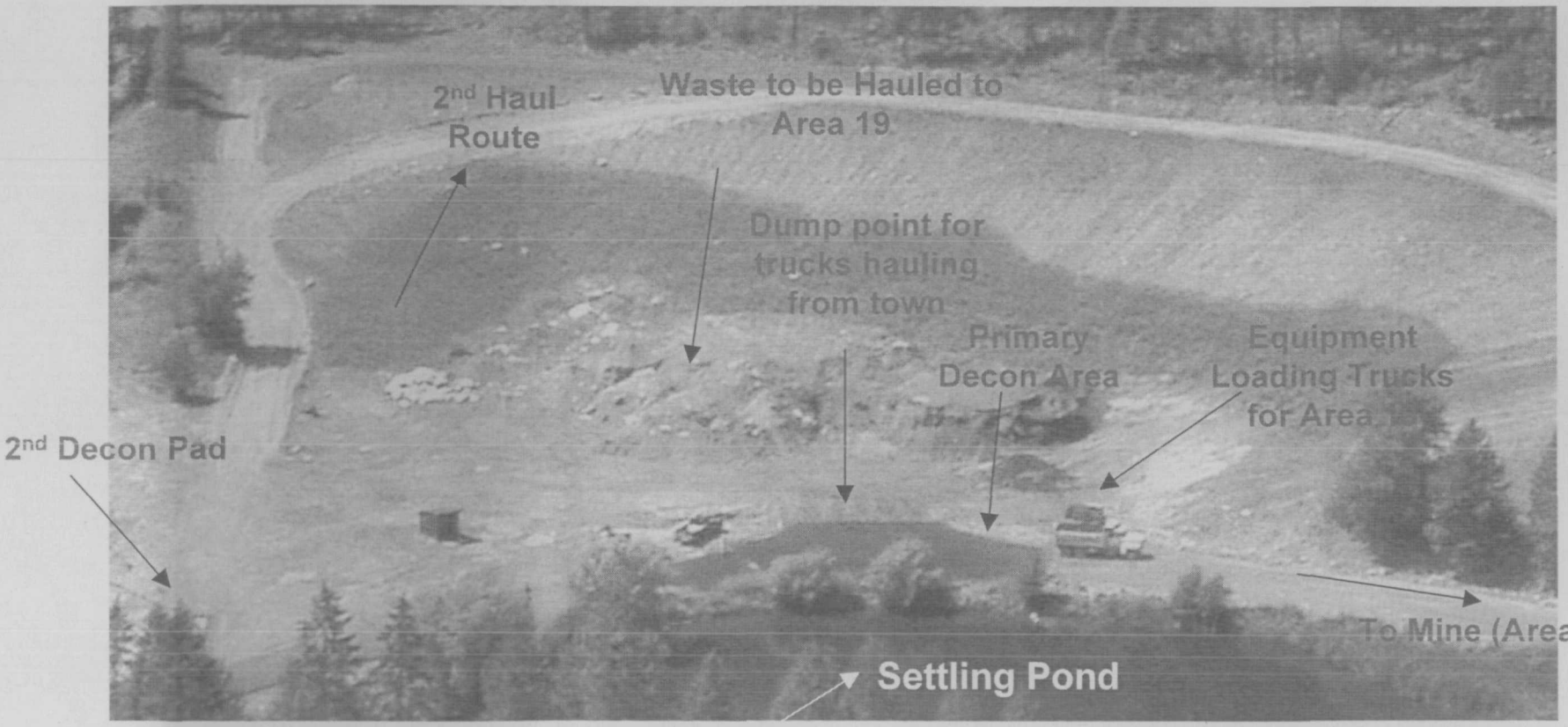

Figure 2: Detailed Aerial View of Amphitheater

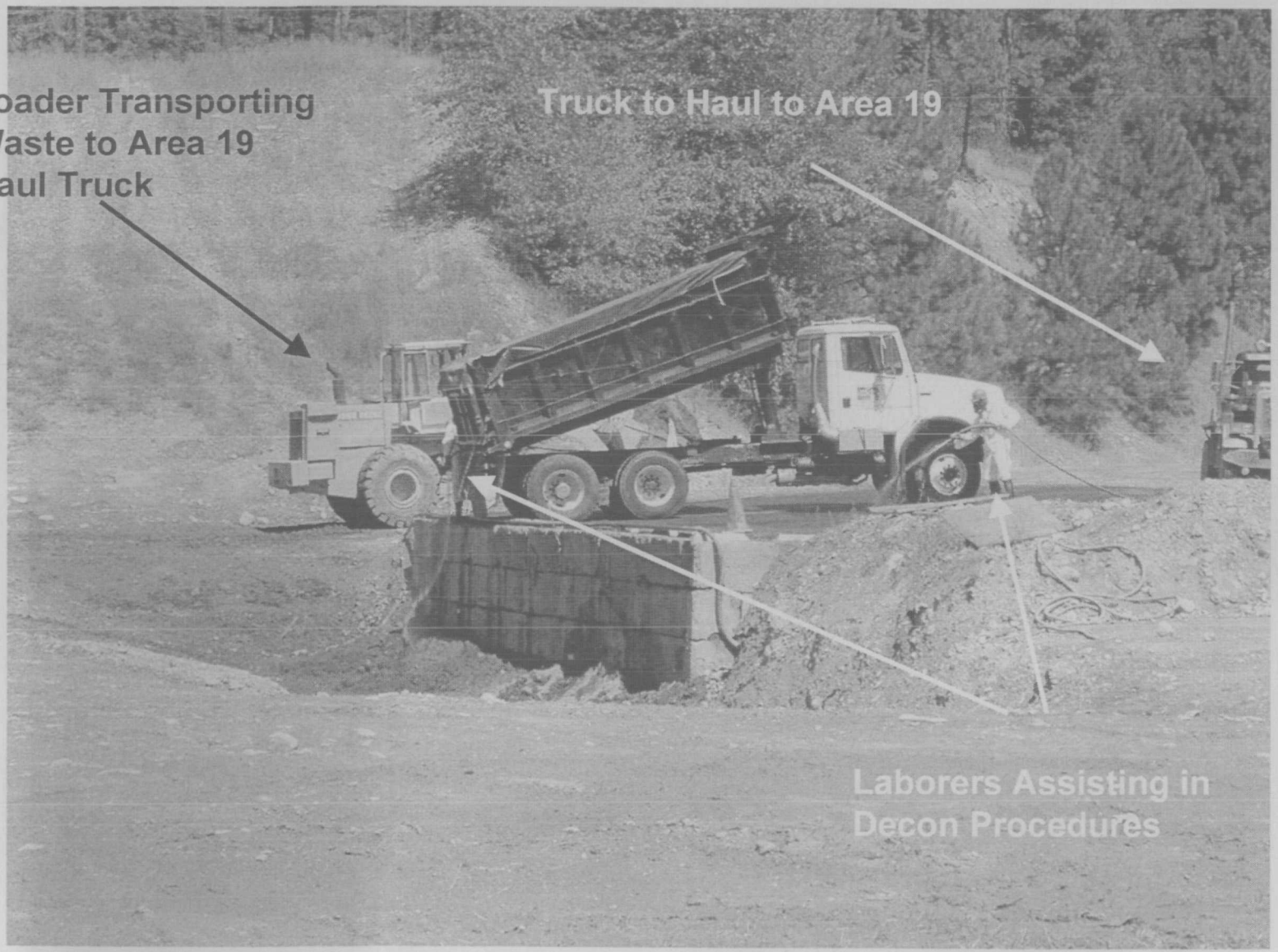

Figure 3: Dumping at the Amphitheater by Local Trucks

Figure 4: Alternate View of Amphitheater from 2nd Haul Route

Figure 5: Area 19 Disposal Site

Appendix B

Appendix B
Additional Information Links

- U.S. Environmental Protection Agency (EPA) – Region 8
  http://www.epa.gov/region8/superfund/libby/

- U.S. Department of Transportation (DOT), John A. Volpe National Transportation Systems Center - ***http://www.volpe.dot.gov***

- U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR Part 1926.1101 -
  http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10862

- Montana Department of Transportation (MDOT) –
  http://www.mdt.state.mt.us/

- Montana Department of Environmental Quality (DEQ), Administrative Rules of Montana (ARM) - ***http://www.deq.state.mt.us/dir/legal/title17.asp***

Appendix C

Comprehensive Site Health and Safety Program

(Provided under separate cover)